

and the tangle of the Swede are made from algæ." "Zygnemas are composed of long tubes joined together by short ones, all marked with beautiful spirals or crosses, or other regular figures. They are large confervæ, and are found in great numbers fifteen thousand feet up the Himalayas, in the cold springs which rise from the glaciers." "The famous red-snow . . . is a cell containing starch and nitrogen; in other words protoplasm. . . . An allied alga is the *Pamella* (sic) *cruenta*, deep red in color, found on stale bread and meat, or upon musty walls of houses."

We cannot forbear one further quotation, since these are more for the delectation of our readers than as a justification of our criticism. "The ferment-mould inhabits liquids—wines, ciders, vinegars, and the like. The story is told of a man who placed his cask of wine in the cellar to age. Some time afterwards, when he attempted to open the cellar-door, it was blocked by great growths of fungus. The cellar was literally filled with the fungus, which had reveled in the wine leaking from the cask. The empty cask was lifted on top of the fungoid growth to the ceiling. This is the famous fungus found in the London docks, swinging and waving like gigantic cobwebs."

Miss (or is it Mrs.?) Creevey declares, at the end of her book, that "the object of the foregoing chapters has been, not a scientific treatise on botany, but to show how comparatively simple and easy it is, and what a pleasure it is, to know something—a great deal—about plants." This naiveté recalls the apt rebuke of an American humorist, "It's better not to know so menny things than to know so menny things that ain't so."

It would have been better for the author (and for the world) if she had not been so impressed with the idea that "it is as a recreation, a summer amusement, that the pursuit of botany is earnestly recommended." We recommend her to suppress this book and to give her undivided attention to botany for a series of years before she again ventures to popularize it.

It is not so remarkable that ignorance and confusion of ideas should exist; it is amazing that they should so frequently get into type. We are surprised that the Messrs. Harper would allow such a publication to bear their imprint.

OPEN LETTERS.

The botanic annual.

In the October issue of the GAZETTE Mr. W. T. Swingle presents a number of remarks on the idea of having an annual report on American botanical literature. The outcome of Mr. Swingle's consideration

is that *no* such publication should be made. As I was one who declared himself willing to work, when the GAZETTE had said a great deal about the desirability of a work this kind, I shall try to show that it is not for my personal pleasure that I did so. When I *was asked* to present my idea in the GAZETTE, and, afterwards, in Madison brought up the matter again, I thought that the GAZETTE had laid the foundation, viz., showed reasons for publishing an annual or yearly list of botanical publications. From the the last article which causes these lines to appear, I understand that Mr. Swingle wishes either no annual at all, or one published in German or French.

The *Botanischer Jahresbericht* cannot be relieved from the charge of neglect. A work of this kind, one of the most expensive periodicals ever seen in our line of work, ought to rely upon the books and papers which could be bought or otherwise promptly secured, and not only upon donations. It should obtain everything published, so that a "nicht gesehen" never could be alleged. If the writer undertook to compile all the literature on vegetable physiology—as, in fact, he has—he would be badly off if he indexed only such papers as he could conveniently lay his hands on, and presented that as the literature "aller Länder." But it must be admitted that it is extremely difficult to get hold of even the titles.

What we need, are *complete* bibliographies in our science, and this first of all. It is quite true that American publications are difficult to obtain in Europe, and here, of course, the booksellers have the responsibility, either in the way of not having the means of procuring the books, or putting too high prices on them if they have them.

I always thought that German, English, and French were the three main languages of the globe. Mr. Swingle, himself, thinks that if a botanist can not read all of these, he "ought to give up his business." Therefore, every botanist ought to be able to read the annual in English. From this to Japanese is a large gulf; nobody would publish such an annual in Japanese, unless joking. But if it were to be published in German, how many English students would be able to read it then? Not many. French would give a worse result.

Two publishers are still willing to take the annual. I repeat this, since it was not believed, as a *fact*. Such annuals as the one proposed are generally well received, when complete. The *Repertorium annum botan. period.* by Bohnensieg and Burck, if it had had good backing, would have been more useful than the *Jahresbericht* is; it contained complete lists of references, while Just's (or rather his successors') work is in many regards incomplete. It would not matter if ten different annuals in the three most important languages of the world were published, if those ten volumes gave *complete* lists of literature and *objective reviews*. Botanists who wish to see, year by year, what appears in the literature on the subject of their specialty, would more gladly go through these ten volumes and find everything, than they would consult the *Jahresbericht* alone and find a part of it.

I have great regard for Mr. Swingle's objections, therefore I tried to meet all of them. The GAZETTE deemed the subject an important one, therefore I hope to be pardoned for discussing it at length.—J. CHRISTIAN BAY, *Bacteriologist of the Iowa State Board of Health, Ames, Iowa.*